

of the sea, and even less remarkable for its beautiful red colour than for its prodigious fecundity.

3. That the reddening of the waters of the lake of Morat by an *Oscillatoria* which DeCandolle has described, has the nearest relation to that of the Arabian Gulf, although the two plants are generically very distinct.

4. That as we may well suppose, according to the accounts of navigators, who mention striking instances of the red colouring of the sea, these curious phænomena, though not observed till quite recently, have nevertheless without doubt always existed.

5. That this unusual colouring of seas is not exclusively caused, as Péron and some others seem to think, perhaps as being chiefly zoologists, by the presence of mollusca and microscopic animalcules, but that it is often also due to the reproduction, perhaps periodical and always very prolific, of some inferior Algæ, and in particular of the species of the singular genus *Trichodesmium*.

6. Lastly, that the phænomenon in question, although generally confined between the tropics, is however not limited to the Red Sea, nor indeed to the gulf of Oman; but that, being much more general, it is found in other seas, for example in the Atlantic and Pacific Oceans, as appears in the 'Journal of Researches' by Mr. Darwin, and from the unpublished documents of Dr. Hinds, communicated by Mr. Berkeley, and from which the following extract is given:—

“Dr. Hinds, who sailed in the ship Sulphur, sent to explore the western coasts of North America, first observed on the 11th of February 1836, near the Abrolhos Islands, the same Alga doubtless which Mr. Darwin saw at the same date. This Alga was again seen many days running. Some specimens of it having been brought to Dr. Hinds, he perceived that a penetrating odour escaped from it which had before been thought to come from the ship; this odour much resembled that which exhales from damp hay. In April 1837, the Sulphur being at anchor at Libertad, near St. Salvador, in the Pacific, Dr. Hinds again saw the same Alga.

“A land breeze drove it for three days in very thick masses about the ship. The sea exhibited the same aspect as at the Abrolhos Islands, but the smell was still more penetrating and disagreeable; it caused in a great many persons an irritation of the conjunctive, followed by an abundant secretion of tears. Dr. Hinds himself experienced it. The Alga in question constitutes a distinct species of the genus *Trichodesmium*, and is named by M. Montagne *T. Hindsii*. It differs from that of the Red Sea both in dimensions and smell.”—*Comptes Rendus*, July 15, 1844.

#### M. DE QUATREFAGES ON GASTEROPOD MOLLUSCA.

M. de Quatrefages, at present engaged in the pursuits of natural history on the coasts of Sicily in company with M. Milne Edwards, has sent to the Academy of Sciences a notice on the group of Gasteropod Mollusca for which he has proposed the name of *Phlebenterata*, and of which the following is an abstract.

1. In all the Phlebenterate Gasteropod Mollusca, the function of

digestion is confounded, so to speak, with those of respiration and circulation. It is this that constitutes the dominant character of the group.

2. This kind of fusion occasions the disappearance of the organs of respiration properly so called. No Phlebenterate has branchiæ in the ordinary sense of the word.

3. Through the same cause the apparatus of circulation is progressively simplified until its complete annihilation. No Phlebenterate possesses veins; the arteries and the heart itself disappear in the greater number. When they exist, they are nothing more than organs fitted to agitate and mix the blood. They have no other functions than the dorsal vessel of insects.

4. In the Enterobranchiata the division of the digestive apparatus brings with it the subdivision of the liver. In the Dermo-branchiata this gland only forms a portion of the partitions of the gastro-vascular abdominal pouches. In no Phlebenterate does the liver exist as a distinct organ. In the grouping of the Mollusca this anatomical character belongs as yet exclusively to the group of which we are speaking.

5. The reproductive apparatus is always asymmetric in the Phlebenterata. Nearly with this exception, the organs both internal and external exhibit a binary lateral symmetry which would be complete, did not the anus sometimes swerve to the right of the medial line. Such of these mollusks as possess multiple exterior organs tend, moreover, to repeat them in a longitudinal series. By these two tendencies the Phlebenterata approach the type of the annulated animals.—*Comptes Rendus*, July 15th, 1844.

*Of the Sexes in Holothuria, Asterias, and Planaria:—Nervous System of Planariæ.*

In a second note, M. de Quatrefages states that by the aid of the microscope he has determined with the most positive certainty, that in *Holothuria tubulosa* and *Asterias rubra* the sexes are separate. In each, the testicles are quite like ovaries in form and position; the nature of the products alone can enable them to be distinguished. He has made similar observations on the *Actinia viridis*. With regard to this latter species, he points out that he could not confound the spermatozoids with the utrical organs that clothe the ovary, and which, taken for the fecundating element by some naturalists, caused them to regard the *Actiniæ* as hermaphrodite; for in the *Actinia viridis* the utrical organs have no resemblance whatever to spermatozoids, and are from ten to twelve times of greater diameter.

In the *Planariæ*, on the other hand, the sexes are really and perfectly united, as Baer and Dugès have admitted; but neither of them had seen the spermatozoids of these animals. M. de Quatrefages states that he has found them in several individuals which likewise bore eggs. The two before-mentioned naturalists had not found any nervous system in the *Planariæ*, and Dugès seems even much disposed to regard them as possessing none. M. de Quatrefages has detected the existence of this system in several species; it was